Test Report on Cement

Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.A G. Narayana Swamy.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	07-02-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	106 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	464 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	25 % to 35

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Asst. Executive Engineer
Yelahanka Division
BBMP, Bangalore - 92

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Test Report on Cement

Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.A G. Narayana Swamy.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	7-02-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	104 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	468 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	25 % to 35

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.A G. Narayana Swamy.

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	M sand	Proposed Use	PCC
Location/Source	Chokkanalli village road	Date of Sampling	08-02-2022
Period of Soaking	24 hours	Date of Testing	08-02-2022

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	651	638	647	
B	Weight of oven - dry sample gm.	643	630	639	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1684	1676	1681	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.657	2.658	2.651	**2.656**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.244	1.270	1.252	**1.255**

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri.A G. Narayana Swamy.

SIEVE ANALYSIS

Total Weight:	3000 gms	Proposed Use	PCC
Type of Material	M sand	Date of Sampling	08-02-2022
Sample Location	Chokkanalli village road	Date of Testing	08-02-2022

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	220	220	7.33	92.67	90 - 100
2.36 mm	315	535	17.83	82.17	75 - 100
1.18 mm	420	955	31.83	68.17	55 - 90
0.600 mm	488	1443	48.10	51.90	35 -59
0.300 mm	748	2191	73.03	26.97	8-30
0.150 mm	620	2811	93.70	6.30	0 - 10
Pan	189	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Developments works to be under taken in Ward No 08 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.A G. Narayana Swamy.

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS 2386 PART 3)

Type of Material	M sand	Proposed Use	PCC
Location/Source	Chokkanalli village road	Date of Sampling	08-02-2022
Period of Soaking	24 hours	Date of Testing	08-02-2022

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.		652	638	647	
B	Weight of oven - dry sample gm.		643	630	639	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1685	1676	1681	
E	Bulk specific gravity	B / (C + A - D)	2.657	2.658	2.651	2.656
G	Absorption (%)	(A - B) *100 / B	1.400	1.270	1.252	1.307

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri.A G. Narayana Swamy.

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	M sand	Proposed Use	PCC
Sample Location	Chokkanalli village road	Date of Sampling	08-02-2022
		Date of Testing	08-02-2022

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	222	222	7.40	92.60	90 - 100
2.36 mm	318	540	18.00	82.00	75 - 100
1.18 mm	420	960	32.00	68.00	55 - 90
0.600 mm	488	1448	48.27	51.73	35 -59
0.300 mm	748	2196	73.20	26.80	8-30
0.150 mm	620	2816	93.87	6.13	0 - 10
Pan	184	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhath Bangalore Mahanagara Palike
Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.A G. Narayana Swamy.
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size	Proposed Use	PCC
Sample Location	Chokkanahalli village road	Date of Sampling	08-02-2022
		Date of Testing	08-02-2022

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	75	75	2.50	97.50	95-100
20.00mm	1377	1452	48.40	51.60	30-70
10.00mm	966	2418	80.60	19.40	10-35
4.75mm	476	2894	96.47	3.53	0-5
Pan	106	3000	100.00	0.00	

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Test Report on Cement

Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.A G. Narayana Swamy.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	08-02-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	106 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	464 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	25 % to 35

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Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.A G. Narayana Swamy.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	8-02-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
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GRADATION FOR GSB
(As per MORT&H 400-1,Grading-II)

Name of Work	:	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri.A G Narayana Swamy.
Date of Testing	:	09-2-2022
Type of Mix	:	GSB
Sample I/D	:	GSB1

Sample Location:	vinayak nagar 5th main appartment road & 2nd main	Date of Sampling:	08-2-2022	
		Date of testing:	09-2-2022	
Type of material & Purpose:	GSB	Oven Dry Wt.(gms):	10000.0	

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
75	0	0	0.00	100.00	-
53	0	0	0.00	100.00	100.00
26.5	2246	2246	22.46	77.54	70-100
9.5	2455	4701	47.01	52.99	50-80
4.75	890	5591	55.91	44.09	40-65
2.36	1201	6792	67.92	32.08	30-50
0.425	1988	8780	87.80	12.20	10-15
0.075	840	9620	96.20	3.80	<5
Pan	380.0				
Total	10000.0				

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Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri.A G Narayana Swamy.

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28))

Date of Testing	09-2-2022		
Layer no. or level	GSB layer		
Depth of hole	150mm		
Field density:	1	2	2
Chainage / Location	Vinayakanagara 5th main Road@15	Vinayakanagara 5th main Road@40	Vinayakanagara 5th main Road@60
Wt. of wet material from hole (Ww) gms.	5987	5970	5990
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10585	10583	10575
Wt. of sand in hole+ cone (w3) gms.	4415	4417	4425
Wt. of cone gms.	1080	1080	1080
Wt. of sand gms.	3335	3337	3345
Bulk density of sand (ys)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.37	2.36	2.36
Moisture meter reading(moisture content)	6.50	6.40	6.40
Result			
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	2.23	2.22	2.22
MDD	2.25	2.25	2.25
OMC	6.30%	6.30%	6.30%
% compaction obtained	98.89	98.64	98.74
% compaction required	98%	98%	98%

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Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri.A G Narayana Swamy.

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28))

Date of Testing	09-2-2022		
Layer no. or level	GSB layer		
Depth of hole	150mm		
Field density:	1	2	2
Chainage / Location	Vinayakanagara 2nd main Road@10	Vinayakanagara 2nd main Road@30	Vinayakanagara 2nd main Road@55
Wt. of wet material from hole (Ww) gms.	5995	5980	5978
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10575	10578	10581
Wt. of sand in hole+ cone (w3) gms.	4425	4422	4419
Wt. of cone gms.	1080	1080	1080
Wt. of sand gms.	3345	3342	3339
Bulk density of sand (ys)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.37	2.36	2.36
Moisture meter reading(moisture content)	6.50	6.40	6.40
Result			
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	2.22	2.22	2.22
MDD	2.25	2.25	2.25
OMC	6.30%	6.30%	6.30%
% compaction obtained	98.73	98.66	98.72
% compaction required	98%	98%	98%

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Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.A G Narayana Swamy.

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**11-2-2022**
Sample Location	Vinayaknagar 5th main app road & 2nd main road	**Date of Testing**	**14-2-2022**

Sl. No.	**Description**		**Test No.**			**Spec Limit (%)**
			1	**2**	**3**	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	356.00	379.00	348.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	270.00	284.00	265.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	86.00	95.00	83.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.16	25.07	23.85	
5	Average Aggregate impact value	(%)	24.36			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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Consultants Representative

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Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.A G Narayana Swamy.

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	Proposed Use	WMM
Sample Location	Vinayaknagar 5th main app road & 2nd main road	Date of Sampling	11-2-2022
		Date of Testing	14-2-2022

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	648	85	521	77
16.0	12.5	1130	122	978	110
12.5	10.0	775	60	720	57
10.0	6.3	615	65	566	45
Total		**3168**	**332**	**2785**	**289**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.48
Elongation Index(%):	10.38
Combined FI+EL (%)	20.86

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Project Division
Yelahanka Zone
BBMP, Bangalore - 92

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TEJUS CONSULTANTS

Consultant's Representative

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TEJUS
CONSULTANTS

Name of Work	:	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	Sri.A G Narayana Swamy.
Date of Testing	:	14-2-2022
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	Vinayaknagar 5th main app road & 2nd main road	Date of Sampling:	11-2-2022
		Date of testing:	14-2-2022
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	389	389	3.89	96.11	95-100
22.4	1780	2169	21.69	78.31	60-80
11.2	2255	4424	44.24	55.76	40-60
4.75	2015.0	6439	64.39	35.61	25-40
2.36	1388.0	7827	78.27	21.73	15-30
0.6	770.0	8597	85.97	14.03	8.0-22.0
0.075	881.0	9478	94.78	5.22	0-8
Pan	522.0	10000			
Total	10000.0				

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CONSULTANTS

Name of Work	:	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagalur and Kattigenahalli Byatarayanapura Constituency.
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Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	Sri.A G Narayana Swamy.
Date of Testing	:	14-2-2022
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

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Pan	522.0	10000			
Total	10000.0				

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Project	Developments works to be under taken in Ward No.93 comprising areas of Solid Waste Disposal Processing units Bellahalli, Bagalkunte and Kattigenahalli Byatarayanapura Constituency.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.A G Narayana Swamy.

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date: 14-02-2022

Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	1	2
Chainage / Location	Vinayaknagar 2nd main road ch;40	Vinayaknagar 2nd main road ch:60
Wt. of wet material from hole (Ww) gms.	5996	5981
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10596	10597
Wt. of sand in hole+ cone (w3) gms.	4404	4403
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3324	3323
Bulk density of sand (ys)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.38	2.38
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	2.24	2.24
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.68	98.46
% compaction required	98%	98%

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Mahadevapura Zone
Bengaluru - 560 092

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.A G. Narayana Swamy.

SIEVE ANALYSIS

Total Weight:	3000	gms		
Type of Materia	M sand		Proposed Use	Concrete
Sample Location	At Plant		Date of Sampling	14-02-2022
			Date of Testing	14-02-2022

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	226	226	7.53	92.47	90 - 100
2.36 mm	280	506	16.87	83.13	75 - 100
1.18 mm	408	914	30.47	69.53	55 - 90
0.600 mm	570	1484	49.47	50.53	35 -59
0.300 mm	748	2232	74.40	25.60	8-30
0.150 mm	536	2768	92.27	7.73	0 - 10
Pan	232	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Cement

TEJUS

Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.A G. Narayana Swamy.
Sample ID	Cement (OPC 43 Grade)
Date of Sample Tested	14-02-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	104 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	426 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	

Remarks : Satisfactory / Not Satisfactory

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Test Report on Cement

TEJUS

Project	Developments works to be under taken in Ward No.05 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagaluru and Kattigenahalli Byatarayanapura Constituency.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.A G. Narayana Swamy.
Sample ID	Cement (OPC 43 Grade)
Date of Sample Tested	14-02-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	107 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	413 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	

Remarks : Satisfactory / Not Satisfactory

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